Fire Inspector I – Course Syllabi

FI-1: Administration

Unit 1: Introduction

Topic 1: Orientation and Administration 0:30
Topic 2: Fire Prevention Certification Process 0:30

Unit 2: Role of the Fire Inspector

Topic 1: Commonly Used Terminology 1:00
Topic 2: Inspections and Compliance Methods 1:00
Topic 3: Legal Responsibilities and Authority 1:30
Topic 4: Codes and Standards 1:30
Topic 5: Ethics 4:00
Topic 6: Incident Reporting 0:30
Topic 7: Public Education 0:30

Unit 3: Inspection Documentation

Topic 1: The Inspection Process 2:00
Topic 2: Commonly Used Reports and Checklists 0:30
Topic 3: Confidentiality and Privacy Requirements 0:30

Unit 4: Complaints

Topic 1: Investigation and Documentation 0:30
Topic 2: Resolution Procedures 0:30

Unit 5: Legal Proceedings

Topic 1: Overview of the Legal Process 0:30
Topic 2: Report Preparation 0:15
Topic 3: Facts vs. Opinions 0:30
Topic 4: Subpoenas, Testimony and Depositions 0:30
Topic 5: Courtroom Demeanor and Appearance 0:15

Unit 6: Permits

Topic 1: Fire Code Permit Types 0:30
Topic 2: Permit Application and Inspection Process 1:00

Unit 7: Plan Review

Topic 1: Purpose of Plan Review 0:30
Topic 2: Activities that Require Plans Submittal 0:30
Topic 3: Basic Components of Construction Documents 1:00

Unit 8: Public Education

Topic 1: Purpose and Value 0:15
Topic 2: Community Needs Evaluation 0:30
Topic 3: Public Education Delivery Models 0:15

FI-1: Field Inspection 1A

Unit 1: Introduction

Topic 1: Orientation and Administration 1:00

Unit 2: Fire Department Access and Water Supply

Topic 1: Fire Department Access 0:30
Topic 2: Available Firefighting Water Supply 1:00
Topic 3: Access and Water Supply Inspection 0:30

Unit 3: Building System Components

Topic 1: Construction Features 2:00
Topic 2: Construction Types 1:30

Unit 4: Occupancy Classifications and Occupant Loads

Topic 1: Occupancy Classifications 1:00
Topic 2: Determining Occupant Load 1:30

Unit 5: Means of Egress

Topic 1: Means of Egress Elements 1:00
Topic 2: Means of Egress Components 2:00
Topic 3: Egress Inspection 1:30

Unit 6: Incidental Storage, Handling, and Use of Hazardous Materials, Flammable and Combustible Liquids, and Gases

Topic 1: Classification and Properties 1:30
Topic 2: Applicable Codes, Standards and Requirements 2:00

FI-1: Field Inspection 1B

Unit 1: Introduction

Topic 1: Orientation and Administration 1:00

Unit 2: Fire Growth Potential in a Building or Space

Topic 1: Fire Behavior 2:00
Topic 2: Elements that Impact Fire Growth Potential 1:30

Unit 3: Portable Fire Extinguishers

Topic 1: Components and Operation 1:00
Topic 2: Inspection, Testing, and Maintenance 0:30

Unit 4: Existing Fixed Fire Suppression Systems

Topic 1: Water-Based Fire Protection Systems 3:00
Topic 2: Special-Agent Fire Extinguishing Systems 1:00

Unit 5: Existing Fire Detection and Alarm Systems

Topic 1: Fire Alarm Systems and Components 0:30
Topic 2: Inspection, Testing and Maintenance 1:00

Unit 6: Hazardous Conditions Involving Equipment, Processes, and Operations

Topic 1: Recognition of Hazardous Conditions 1:00

Unit 7: Fire Potential in the Wildland Urban Interface Environment

Topic 1: History 1:00
Topic 2: Fire Behavior in a Wildland Urban Interface 1:30
Topic 3: Fire Hazard Severity Zones 1:00
Topic 4: Wildland Urban Interface Issues 1:30

Unit 8: Tents, Canopies and Temporary Membrane Structures

Topic 1: Tents, Canopies and Temporary Membrane Structures 1:00

Unit 9: Emergency Planning and Preparedness Measures

Topic 1: Emergency Evacuation and Relocation Requirements and Elements 0:30
Topic 2: Conducting an Emergency Evacuation Drill 0:30

FI-1: Fireworks and Explosives

Unit 1: Introduction

Topic 1: Orientation and Administration 0:30

Unit 2: Laws and Regulations

Topic 1: Laws and Regulations 0:30

Unit 3: Fireworks

Topic 1: Classifications 0:30
Topic 2: Licenses and Permits 1:00
Topic 3: Storage 0:30
Topic 4: Seizure 0:30
Topic 5: Retail Fireworks Stands 0:30
Topic 6: Special Effects 0:30
Topic 7: Public Display 1:00
Topic 8: Model Rockets 0:30

Unit 4: Explosives

Topic 1: Identification 1:00
Topic 2: Licenses and Permits 0:30

Course: **FI-1: Administration** **CFSTES**
Hours: 25:00 (21:30 = instruction / 3:30 = testing)
Designed For: The entry-level fire inspector
Description: After completion of this course, the student will have an understanding of certification and capstone testing and the role of the fire inspector including commonly used terms, the importance of fire prevention, compliance using enforcement and legally established responsibilities, the value of ethics and public education, writing and maintaining inspection reports, and legal proceedings including the inspection process and courtroom preparation and decorum.
Prerequisites: None
Passing Criteria: 80%
Certification: Fire Inspector I
Class Size: 30
Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ California Fire Code	current	International Code Council (ICC)
▪ *Fire Inspection and Code Enforcement*	7th	IFSTA
REQUIRED INSTRUCTOR MATERIALS	**EDITION**	**VENDORS**
▪ California Building Code	current	International Code Council (ICC)
▪ California Fire Code	current	International Code Council (ICC)
▪ CCR Title 19	current	www.oal.ca.gov/publications.htm
▪ *Fire Inspection and Code Enforcement*	7th	IFSTA

VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI1 - ADMINISTRATION COURSE SYLLABUS

Course Objectives: to provide the student with…

a) A basic knowledge of the role of the fire inspector
b) A basic knowledge of writing and maintaining permits and reports
c) A basic knowledge of investigating, documenting and resolving complaints
d) A basic knowledge of the legal process as it relates to the role of the fire inspector
e) A basic knowledge of permit types and process
f) A basic knowledge of plan review as it relates to construction features and fire protection systems
g) A basic knowledge of the value of public education, delivery methods and community-based messages
h) An opportunity to conduct a basic fire inspection and create inspection documentation

Course Content 25:00

Unit 1: Introduction

Topic 1: Orientation and Administration 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to

Enabling Learning Objectives (ELO):

1. [text]

Discussion Questions

1. [text]

Activities

1. [text]

Evaluation: [text]

Topic 2: Fire Prevention Certification Process 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to

Enabling Learning Objectives (ELO):

1. Understand different levels of certification
2. Understand the capstone testing process

Discussion Questions

1. [text]

Activities

1. [text]

Evaluation: Formative Test, Summative Test

Unit 2: Role of the Fire Inspector (CTS: 1-1 and 1-3)

Topic 1: Commonly Used Terminology 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to define common terms found in commonly-used fire prevention codes and references.

Enabling Learning Objectives (ELO):

1. Define common terms and definitions found in the current California Building Code, California Fire Code, NFPA 1031, *Fire Inspection and Code Enforcement* (IFTSA)

Discussion Questions

1. What is "occupancy"?
2. What is the difference between a "code" and a "standard"?

Activities

1. Match definitions to terms

Evaluation: Formative Test, Summative Test

Topic 2: Inspections and Compliance Methods 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the need for inspections and code compliance methods.

Enabling Learning Objectives (ELO):

1. Describe the need for inspections, including:
   - Fire and life safety enhancement
   - Community hazard reduction
   - Firefighter safety improvement
2. Describe methods for obtaining code compliance through education, engineering, and enforcement

(3Es), including:
- Inspection warrants
- Appeals
- Alternate means and methods

Discussion Questions
1. What are the different aspects of education, engineering, and enforcement?
2. What components are necessary to justify an inspection warrant?

Activities
1. Discuss case law established through *See vs. Seattle* (1967)

Evaluation: Formative Test, Summative Test

Topic 3: Legal Responsibilities and Authority 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify inspection authority and regulatory requirements as well as an AHJ's liability for failure to perform.

Enabling Learning Objectives (ELO):
1. Identify the inspection authority in the California Health and Safety Code
2. Identify the regulatory requirements found in:
   - California Code of Regulations (CCR) Title 19 (Public Safety)
   - CCR Title 24 part 2 (Building Code)
   - CCR Title 24 part 9 (Fire Code)
   - Local adoption and enforcement authority
3. Describe the jurisdictional organizations other than the fire department that have requirements or conduct inspections relating to fire prevention and life safety, including:
   - Building department
   - Planning department
   - Public works engineering
   - Water department
   - Law enforcement
   - Division of Occupational Safety and Health (elevators)
   - Office of Statewide Health Planning and Development (OSHPD) (hospitals)
   - Division of the State Architect (DSA) (public schools)
4. Describe the additional jurisdictional organizations that have requirements or conduct inspections relating to the wildland urban interface environment, including:
   - Other local fire agencies
   - CalFire
   - U.S. Forest Service
   - Bureau of Land Management
   - Park Service
   - Department of Fish and Game
   - Fire Safe Council
5. Identify an AHJ's liability for failure to perform

Discussion Questions
1. Can a fire inspector be held liable for negligence?
2. What occupancies does the state regulate?
3. Where does a fire inspector get his or her authority?

Activities

1. Discuss *Widmar vs. Marysville* (fire = 1974 / resulting law = 1984)

Evaluation: Formative Test, Summative Test

Topic 4: Codes and Standards 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify common codes and standards used in fire prevention and other California adopted codes, standards, and statutes, and understand that code adoption processes vary by jurisdiction.

Enabling Learning Objectives (ELO):

1. Identify and be familiar with commonly-used codes and standards published by:
   - International Code Council (ICC codes)
   - National Fire Protection Association (NFPA standards)
2. Identify and be familiar with codes and standards adopted as part of CCR Title 24 by the California Building Standards Commission, including:
   - California Building Code (part 2)
   - California Fire Code (part 9)
   - California Residential Code (pending adoption)
3. Identify other codes and standards adopted in California as part of CCR Title 24 including:
   - California Electrical Code (part 3)
   - California Mechanical Code (part 4)
   - California Plumbing Code (part 5)
   - California Energy Code (part 6)
   - California Elevator Safety Construction Code (part 7)
   - California Historical Building Code (part 8)
   - California Code for Building Conservation (part 10)
   - California Reference Standards Code (part 12)
4. Identify statutes that relate to fire protection, including:
   - California Government Code (GC)
   - California Health and Safety Code (HSC)
   - California Public Resources Code (PRC)
5. Describe jurisdictional local code adoption processes and specific statutory justifications for amending state codes requirements, including:
   - Geographic conditions
   - Topographic conditions
   - Climatic conditions

Discussion Questions

1. What is the difference between a statute and a regulation?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Ethics 4:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to understand ethics-related terminology and describe how ethical decision-making and behavior impact a fire inspector's work environment.

Enabling Learning Objectives (ELO):

1. Identify definitions and terminology, including but not limited to:

- Ethics
- Core values

2. Describe how one's ethics and core values impact the work environment
3. Describe the ethical aspects of:
   - Code enforcement
   - Decision-making models and systems
   - Principle-centered decision making
   - Gifts and gratuities
   - Professional decorum

Discussion Questions

1. When is it acceptable to receive a "gift" during a fire inspection?
2. If the inspector knows the business operator or owner personally, what practical steps should he or she take when conducting an inspection?

Activities

1. Ethical Awareness Inventory
2. Case studies

Evaluation: Formative Test, Summative Test

Topic 6: Incident Reporting.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose of NFIRS and local reporting systems and how they impact fire prevention.

Enabling Learning Objectives (ELO):

1. Describe the type of data collected in a local incident reporting system, including:
   - Incident location
   - Dollar loss
   - Origin and cause
   - Injuries and deaths
   - Fire prevention effectiveness
   - Number of incidents
2. Describe how local incident reporting relates to the National Incident Fire Reporting System (NFIRS)
3. Describe how incident report data (fire trend tracking) ultimately impacts fire prevention

Discussion Questions

1. What information should an inspector collect during an inspection that would be valuable in an emergency incident?
2. What fire incident information would be valuable in conducting a fire prevention inspection?

Activities

1. Share examples of incident reporting forms.

Evaluation: Formative Test, Summative Test

Topic 7: Public Education.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe a basic public education campaign.

Enabling Learning Objectives (ELO):

1. Describe the public education process, including:
   - Assessing community risk (wildland urban interface, industrial, elderly populations, school-aged children, etc.)

- Developing content to address the identified issue
- Choosing a delivery model (public speaking, presentations, etc.)
- Creating awareness through message delivery
- Evaluating impact

Discussion Questions

1. What are the culture-specific issues in your community?
2. What information and materials should a fire agency prepare in advance of an emergency?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 3: Inspection Documentation (CTS: 1-2 and 1-4)

Topic 1: The Inspection Process 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to prepare for, carry out, document and report on, and follow up on an inspection.

Enabling Learning Objectives (ELO):

1. Describe preparations for an inspection, including:
   - Reviewing past records
   - Reviewing last inspection date
   - Reviewing past violations and compliance
   - Gathering necessary records or checklists
   - Gathering safety equipment and clothing appropriate for the inspection conditions
   - Making an inspection appointment if necessary
2. Describe the physical inspection process, including:
   - Making introductions and stating inspection purpose
   - Gaining right of entry (voluntary)
   - Obtaining an inspection warrant (if owner refuses entry)
   - Verifying the occupancy and determining if there is a change of use or occupancy
   - Inspecting the building in an orderly manner (systematic approach)
   - Inspecting operational and hazardous processes
   - Reviewing inspection findings and compliance requirements with occupant
3. Describe documenting and reporting an inspection, including:
   - Writing the report which may include:
     - Violations observed
     - Corrective action
     - Time allowed for compliance
     - Code sections (if applicable)
   - Ensuring proper documentation, accuracy, and completeness
     - Use clear writing, and proper grammar and spelling
     - Identify premise, owner, and contact information
     - Identify violations, code sections cited, and descriptions
     - Identify applicable codes and standards
     - Identify a timeframe for violation compliance
     - Identify penalties for failure to correct violations
     - Realize that others will read and use your documents

    - Realize that initial inspection reports can become part of a legal process
  - Distributing the report
4. Describe the inspection report follow-up process, including:
  - Documenting remaining violations and issue additional notices of violation as necessary
  - Re-inspection to confirm correction of violations
  - Documentation to verify compliance with violations
5. Describe how to document violations:
  - Require immediate compliance for imminent hazards
  - Allow 15-30 days for compliance after first inspection for standard violation
  - Allow 15-30 days after re-inspection for standard violations
  - Take legal action in conformance with agency requirements for failure to comply

Discussion Questions

1. When should an inspector provide a verbal notice of a hazard and not document the violation?
2. What documents should an inspector review prior to the inspection?

Activities

1. Using a well-written inspection report as an example, provide students with violations from an inspection and have them write their own report.

Evaluation: Formative Test, Summative Test

Topic 2: Commonly Used Reports and Checklists.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the uses and content of typical templates used in fire inspections.

Enabling Learning Objectives (ELO):

1. Identify template types, including:
  - Correction letters
  - Notices of violation
  - Notice and orders
  - Occupancy-specific violation checklists

Discussion Questions

1. What are the advantages of a checklist?
2. What are the disadvantages of a checklist?

Activities

1. Review samples of common templates and checklists.

Evaluation: Formative Test, Summative Test

Topic 3: Confidentiality and Privacy Requirements.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify agency policies on public records and an organization's right to maintain trade secrets, and describe aspects of anonymity and confidentiality related to inspection documents.

Enabling Learning Objectives (ELO):

1. Describe how to obtain agency policies on which records are considered public records
2. Describe a company's rights to maintain trade secrets (processes and ingredients/components) (CUPA)
3. Describe the rights of a complaining party to remain anonymous when reporting a violation
4. Describe how documents related to active inspections and code violations must remain confidential without specific court orders if a violation may result in legal action

Discussion Questions
1. When is an inspection history confidential?
2. What information should remain unavailable to the public?
3. What does a business have to do to protect its trade secret processes?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 4: Complaints (CTS: 1-7)

Topic 1: Investigation and Documentation 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to receive and document a complaint, check records for similar violations, validate a complaint, maintain compliant confidentiality, and describe how political pressure can influence the complaint process.

Enabling Learning Objectives (ELO):
1. Describe how to properly receive and document a complaint
2. Describe how to check records for similar violations
3. Describe how to validate a complaint (inspection vs. records search)
4. Describe how to maintain complainant confidentiality
5. Describe the influences of political pressure

Discussion Questions
1. How would you prioritize a complaint received?
2. How would you respond to a non-fire-hazard complaint?
3. What are the steps in a complaint resolution process?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Resolution Procedures 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to resolve or refer a complaint.

Enabling Learning Objectives (ELO):
1. Describe how to determine the appropriate agency to act on the complaint
2. Describe how to refer a complaint to the appropriate agency
3. Describe how to act on a complaint
4. Describe how to issue a notice of violation for a validated complaint
5. Describe how to follow up to confirm compliance

Discussion Questions
1. What types of complaints would an inspector refer to another agency or department?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 5: Legal Proceedings (CTS: 1-8)

Topic 1: Overview of the Legal Process 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe and identify various terms and legal processes.
Enabling Learning Objectives (ELO):
1. Describe how to consult agency legal counsel
2. Describe the difference between criminal and civil proceeding
3. Describe case preparation
4. Describe case filing (agency initiation) vs. subpoena (external initiation)
5. Describe depositions
6. Describe testimony
7. Describe judgment
8. Describe subpoenas
9. Describe the influence of political pressure
10. Describe indirect documents (emails, phone records, etc.)
11. Describe expert testimony

Discussion Questions
1. When should a fire inspector seek legal counsel?
2. Who should be notified if a fire inspector receives a subpoena?
3. Should a fire inspector make statements without legal counsel (depositions)?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Report Preparation 0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to properly prepare a report for court including maintaining confidentiality, compiling records, developing timelines, collecting supporting documents, and responding to requests for legal and certified documents as required by agency counsel.
Enabling Learning Objectives (ELO):
1. Describe how to maintain confidentiality
2. Describe how to compile all case-related records
3. Describe how to develop timelines documenting enforcement activities
4. Describe how to collect supporting documents
5. Describe how to respond to a request for all legal and certified documents as required by agency counsel

Discussion Questions
1. What are the steps in preparing documents for court?
2. Who should review the documents prior to their release?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Facts vs. Opinions 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to differentiate between facts and opinions.
Enabling Learning Objectives (ELO):
1. Identify facts as documentation, including:

- Physical evidence
- Photographs
- Witness statements
- First responder statements

2. Identify opinions as not admissible, including:
   - Personal biases
   - Hearsay
   - Irrelevant statements

Discussion Questions

1. What are examples of facts as related to a fire inspection?
2. What are examples of opinions that should not influence a case?
3. When should a fire inspector give an opinion?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 4: Subpoenas, Testimony and Depositions 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to respond to a subpoena and give testimony or a deposition.

Enabling Learning Objectives (ELO):

1. Describe the use of a subpoena, including:
   - Court-ordered
   - Used to collect evidence in a case
2. Describe the purpose of a preliminary meeting with counsel prior to deposition or testimony
3. Describe a deposition, including:
   - Court-ordered
   - Takes place outside courtroom
   - Sworn in and recorded
   - Both counsels present
   - No jury
   - Examined and cross examined
   - Transcription reviewable
   - Becomes a legal document and can be used against you in court
4. Describe testimony, including:
   - Inside courtroom
   - Sworn in
   - Judge and/or jury present
   - Examined and cross examined

Discussion Questions

1. In what situation might a deposition be ordered?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Courtroom Demeanor and Appearance 0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to prepare to

properly provide testimony in a courtroom setting.

Enabling Learning Objectives (ELO):

1. Describe proper courtroom demeanor and appearance, including:
    - Wearing appropriate attire
    - Being well groomed
    - Using a professional tone of voice
    - Restraining unnecessary body language
    - Maintaining direct eye contact
    - Maintaining a professional attitude (argumentative vs. pleasant)
    - Answering all questions truthfully
    - Allowing objection time between question and answer
    - Avoiding volunteering information
    - Moderating reactions to questions and activities during testimony

Discussion Questions

1. What is appropriate attire for a court appearance?
2. When should a fire inspector interrupt an attorney during testimony?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 6: Permits (CTS: 1-5)

Topic 1: Fire Code Permit Types.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe construction and operational permits and permitting requirement thresholds.

Enabling Learning Objectives (ELO):

1. Describe construction permits (California Fire Code)
2. Describe operational permits (California Fire Code)
3. Describe permitting requirement thresholds

Discussion Questions

1. What are examples of operational permits in your local community?
2. What types of construction permits does the fire code regulate?

Activities

1. Activity 6-1: Fire Code Permit Types

Evaluation: Formative Test, Summative Test

Topic 2: Permit Application and Inspection Process.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the components of a completed application, how to maintain permits and documentation, the conditions that prevent issuing or dictating revocation of a permit, and the construction and operational permit processes.

Enabling Learning Objectives (ELO):

1. Describe the components of a completed application, including:
    - Contact information
    - Project description
    - Licensing information

- Workers compensation insurance
- Fee payment prior to issuing permit

2. Describe how to maintain permits and documentation
3. Describe conditions preventing issuance or dictating revocation of a permit
4. Describe construction permit process, including:
   - Plan submittal
   - Plan review
   - Approval or correction
   - Permit approval, project inspections
   - As-built drawings
   - Completion record, final
5. Describe operation permit process, including:
   - Documentation submittal (plans and processes)
   - Site inspection
   - Permit approval

Discussion Questions

1. What are some typical operational permits?
2. Under what conditions should a fire inspector deny or revoke a permit?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 7: Plan Review (CTS: 1-6 and 3-5)

Topic 1: Purpose of Plan Review 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose of plan review.

Enabling Learning Objectives (ELO):

1. Describe the purpose of plan review, including:
   - Documenting proposed activities for construction or modifications (tenant improvement) to a location regulated by the California Building Code and California Fire Code
   - Identifying the project designer and installer
   - Discovering discrepancies or omissions in the design that must be changed prior to project approval
   - Ensuring compliance with applicable codes, standards and practices
   - Approving a construction project or a process
   - Issuing a permit for an activity or process

Discussion Questions

1. What is the primary purpose of plan review?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Activities that Require Plans Submittal 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify when plans must be submitted.

Enabling Learning Objectives (ELO):

1. Describe the activities that would require the submittal of a set of plans:
   - New construction
   - Modifications to an existing structure (including tenant improvement)
   - Change of occupancy
   - Change in operational use

Discussion Questions

1. What activities do not require a permit?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Basic Components of Construction Documents.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify construction documents, plan components, common fire protection symbols and terminology, and will be able read and comprehend plans for fire protection systems.

Enabling Learning Objectives (ELO):

1. Identify types of construction documents, including:
   - Plans
   - Cut sheets
   - Calculations
   - Technical reports
   - Specifications
2. Identify components of a plan, including:
   - Title sheet
     - Table of contents
     - Scope of work
     - Designer's information
     - General conditions
     - Compass point
     - Revision block
     - Key plan
     - Deferred submittals
   - Title block (all sheets)
   - Scale (all sheets)
   - Views
     - Plan
     - Elevation
     - Section
     - Detailed
3. Identify common fire protection symbols and terminology related to:
   - Fire alarms
   - Fire sprinklers
   - Special systems
   - Fire protection
   - (See NFPA 170)

4. Describe and demonstrate reading and comprehending plans for fire protection systems

Discussion Questions

1. What is the difference between plan view and elevation view?
2. Where would you find installation details for a commercial hood system in a set of plans?

Activities

1. Given a set of plans, identify the key components, symbols, and terminology.

Evaluation: Formative Test, Summative Test

Unit 8: Public Education (CTS: 2-1)

Topic 1: Purpose and Value 0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose and value of public education.

Enabling Learning Objectives (ELO):

1. Describe the purpose and value of public education, including:
   - Creating awareness
   - Educating and informing the public
   - Changing behavior
   - Creating public relations

Discussion Questions

1. What is the purpose of public education?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Community Needs Evaluation 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to determine community needs.

Enabling Learning Objectives (ELO):

1. Describe how to use demographics
2. Identify geographical features
3. Identify climatic conditions that pose a threat to the community
4. Identify conditions in the wildland urban interface that pose a threat to the community
5. Identify special hazards that exist in the community

Discussion Questions

1. What are the cultural needs of your community?

Activities

1. Conduct community risk analysis based on a hypothetical community and determine priorities for public education.

Evaluation: Formative Test, Summative Test

Topic 3: Public Education Delivery Models 0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to select a delivery method and evaluate the effectiveness of a public education campaign.

Enabling Learning Objectives (ELO):

1. Identify ways to deliver public education, including:

- Community meetings
- Government meetings
- School presentations
- Lectures
- Seasonal events
- On-site training at a specific location or hazard
- Print and web articles regarding public education in community publications
- Public service announcements (PSA)

2. Describe evaluating the outcome of a public education message, including:
   - Identifying loss reduction
   - Identifying risk reduction
   - Measuring outcomes against goals and objectives and interpret results
   - Soliciting participant feedback
   - Determining the need for program modification

Discussion Questions

1. When should an inspector prepare a PSA?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Activity 6-1: Fire Code Permit Types

Identify which activities or operations require an operational permit and which require a construction permit.

	Activity or Operation	Required Permit	
1.	Spraying or dipping	___ Construction	___ Operational
2.	Aviation facilities	___ Construction	___ Operational
3.	Exhibits and trade shows	___ Construction	___ Operational
4.	Combustible Fibers	___ Construction	___ Operational
5.	Flammable liquids	___ Construction	___ Operational
6.	Floor finishing	___ Construction	___ Operational
7.	Automatic fire extinguishing systems	___ Construction	___ Operational
8.	Compressed gas systems	___ Construction	___ Operational
9.	Lumber yards	___ Construction	___ Operational
10.	Modifying an alarm system	___ Construction	___ Operational
11.	Installing a Class B furnace (industrial oven)	___ Construction	___ Operational
12.	Places of assembly	___ Construction	___ Operational
13.	Private fire hydrant in a commercial complex	___ Construction	___ Operational
14.	Waste handling	___ Construction	___ Operational
15.	Temporary tent installation	___ Construction	___ Operational

Activity 6-1: Fire Code Permit Types

Answer Key

1. Spraying or dipping: C / O
2. Aviation facilities: O
3. Exhibits and trade shows: C
4. Combustible fibers: C
5. Flammable liquids: C / O
6. Floor finishing: O
7. Automatic fire-extinguishing systems: C
8. Compressed gas systems: C / O
9. Lumber yards: O
10. Modifying a fire alarm system: C
11. Installing a Class B furnace (industrial oven): C
12. Places of assembly: O
13. Private fire hydrant in a commercial complex: C / O
14. Waste handling: O
15. Temporary tent installation: C / O

Course: **FI-1: Field Inspection 1A** **CFSTES**
Hours: 20:00 (17:00 = instruction / 3:00 = testing)
Designed For: The entry-level fire inspector
Description: At the completion of this coarse the student will have an introductory knowledge of fire department access and water supply, building system components, occupancy classifications and occupant loads, means of egress, and incidental storage, handling and use of hazardous materials, flammable and combustible liquids, and gases.
Prerequisites: FI-1: Administration
Passing Criteria: 80%
Certification: Fire Inspector I
Class Size: 30
Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ California Fire Code	current	International Code Council (ICC)
▪ *Fire Inspection and Code Enforcement*	7th	IFSTA
REQUIRED INSTRUCTOR MATERIALS	**EDITION**	**VENDORS**
▪ California Building Code	current	International Code Council (ICC)
▪ California Fire Code	current	International Code Council (ICC)
▪ CCR Title 19	current	www.oal.ca.gov/publications.htm
▪ *Fire Inspection and Code Enforcement*	7th	IFSTA

VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI1 – FIELD INSPECTION 1A COURSE SYLLABUS

Course Objectives: to provide the student with:

a) An introduction to fire department access and water supply
b) An introduction to building system components
c) An introduction to occupancy classifications and occupant loads
d) An introduction to means of egress
e) An introduction to incidental storage, handling, and use of hazardous materials, flammable and combustible liquids, and gases

Course Content 17:00

Unit 1: Introduction

Topic 1: Orientation and Administration 1:00
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to
Enabling Learning Objectives (ELO):
Discussion Questions
1. [text]

Activities
1. [text]
Evaluation: Formative Test, Summative Test

Unit 2: Fire Department Access and Water Supply (CTS 3-11 and 3-14)

Topic 1: Fire Department Access.....0:30
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the requirements and specifications for fire department emergency access.
Enabling Learning Objectives (ELO):
1. Identify the requirements for fire department access (refer to local requirements), including:
   - Access must be provided to within 150 feet of all portions of the exterior of the building
   - Access more than 150 feet must be provided with a approved turn around
2. Identify the specifications for a required fire department access roadway, including:
   - Width should be a minimum of 20 feet clear width
   - Turn radii must be in conformance with local apparatus
   - Height minimum 13 feet 6 inches
   - Weight must be in conformance with local apparatus axle loads
   - Must have all-weather driving surface
   - Slope of the road must be approved locally (see CFC Appendix D)
   - Bridges must be designed to support fire apparatus
   - Signage and curb marking must be provided in compliance with the California Vehicle Code

Discussion Questions
1. Why do local jurisdictions require fire lanes?
2. What constitutes an all-weather driving surface?

Activities
1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Available Firefighting Water Supply.....1:00
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the necessary tools to evaluate available water flow, identify issues that impact water flow testing, describe the impact of hydrant spacing and indentify hydrant types, and identify and describe water distribution systems and water sources.
Enabling Learning Objectives (ELO):
1. Identify the tools needed to evaluate available water flow, including:
   - Pitot gauge
   - Pressure gauge
   - Water map showing mains and direction of flow
   - Diffusers
2. Identify issues that impact water flow testing, including:
   - Discharge requirements (National Pollutant Discharge Elimination System)
   - Flood control authority policies
   - Water purveyor policies
3. Describe how hydrant spacing impacts firefighting operations
4. Identify different hydrant types

5. Identify water distribution systems, including:
   - Private vs. public systems
   - Private vs. public fire hydrants
6. Describe how dead end water lines impact available fire flow
7. Describe approved water sources

Discussion Questions

1. How do you determine the fire flow for a building or project?
2. How does the installation of fire sprinklers affect fire flow?
3. What sprinkler systems qualify for fire flow reductions?
4. What are the minimum fire flow requirements for commercial and residential projects?
5. How do you determine hydrant spacing?
6. Is a recycled water system an approved water source for firefighting?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Access and Water Supply Inspection 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to properly inspect, verify proper maintenance of, and verify deficiencies of a location for fire department access and water supply.

Enabling Learning Objectives (ELO):

1. Describe how to verify that a fire department access road was required as part of construction, including:
   - Ensuring proper and adequate addressing for the property
   - Ensuring all access keys (if provided) are correct and in the key box
   - Verifying proper fire lane maintenance
   - Verifying proper fire department access maintenance
   - Verifying provision of proper fire lane signage
2. Describe how to verify proper maintenance of required water supplies, including:
   - Verifying access to hydrants maintenance
   - Verifying proper maintenance of private hydrants in accordance with CCR Title 19
3. Describe how to verify deficiencies, including:
   - Observation and documentation
   - Reporting in accordance with jurisdictional codes, standards, and policies
   - Referring to appropriate level when necessary

Discussion Questions

1. What code requires access and water supply for firefighting?
2. What does the code require as the minimum clear height for a fire lane?
3. What does the code state as the minimum width of a fire lane?
4. Who designates fire lanes?
5. Who enforces no parking requirements in a fire lane for your community?

Activities

1. To be determined by instructor

Evaluation: Formative Test, Summative Test

Unit 3: Building System Components (CTS: 3-4)

Topic 1: Construction Features 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the basic features of construction components.

Enabling Learning Objectives (ELO):

1. Identify the basic features of the following construction components, including:
    - Foundations
    - Exterior walls
    - Floor and ceiling assemblies
    - Roof covering and assembly classifications
    - Fire barriers
    - Fire partitions
    - Fire walls
    - Fire-resistant joint systems
    - Enclosed stairs
    - Horizontal assemblies (exit corridors, horizontal exits, rated, unrated)
    - Opening protection
    - Penetration protection
    - Shaft enclosures
    - Smoke barriers
    - Smoke partitions
    - Draft stops
    - Attic stops
    - Interior finishes
    - Fire sprinkler systems (impacts other features)

Discussion Questions

1. What is the purpose of a draft stop?
2. What are the components of a fire wall?
3. What is the purpose of a parapet?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Construction Types 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify types of construction and confirm that construction methods comply with code requirements.

Enabling Learning Objectives (ELO):

1. Identify construction types (methods and materials), including:
    - Type I (A and B) – CBC, Chapter 6, Table 601; IFSTA, p. 124 (7th ed.),Table 4.1
    - Type II (A and B) – CBC, Chapter 6, Section 602.2 and Table 601; IFSTA, p. 124 (7th ed.), Table 4.1
    - Type III (A and B) – CBC, Chapter 6, Section 602.3; IFSTA, p. 124 (7th ed.), Table 4.1
    - Type IV – Heavy Timber - CBC, Chapter 6, Section 602.4; IFSTA, p. 124 (7th ed.), Table 4.1
    - Type V (A and B) – Wood Frame – CBC, Chapter 6, Section 602.5; IFSTA, p. 124 (7th ed.), Table 4.1
2. Describe construction type in additions and remodels and confirming that construction methods comply with code requirements

Discussion Questions

1. What are the different types of construction?
2. What type of construction does the code approve for hospitals?

Activities

1. Mix and match exercise to identify correctly the components of different types of construction.

Evaluation: Formative Test, Summative Test

Unit 4: Occupancy Classifications and Occupant Loads (CTS: 3-1 and 3-2)

Topic 1: Occupancy Classifications.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify occupancy-related codes, regulations and standards; the correct occupancy classification for various occupancies and uses; and occupancy-related fire and life safety hazards.

Enabling Learning Objectives (ELO):

1. Identify how occupancy classifications are determined by the building official
2. Identify the applicable codes, regulations and standards
3. Identify fire or life safety hazards presented by various occupancies
4. Identify occupant load factors for all uses and occupancies
5. Identify operational features that change the occupancy classification
6. Identify state-regulated occupancy classifications
7. Describe how the classifications and uses of a building can be distinct and different within a single building, including:
   - Mixed-use
   - Single-use

Discussion Questions

1. What is the difference between gross and net square footage?
2. Who determines occupant classifications and occupant loads?
3. What occupant load factors are used for assembly uses?
4. What is a mixed-use occupancy?

Activities

1. Fill-in-the-blank occupancy classification identification.

Evaluation: Formative Test, Summative Test

Topic 2: Determining Occupant Load.....1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to correctly determine the occupant load of a building or a portion of a building based on use and square footage.

Enabling Learning Objectives (ELO):

1. Identify the function of the area to be evaluated
2. Identify the correct occupant load factor based on function using Table 1004.1.1 – Maximum Floor Area Allowances Per Occupant (CFC or CBC)
3. Describe how to determine square footage, including:
   - Gross square footage: the inside dimension of the exterior walls of a building
   - Net square footage: the actual occupied area excluding shafts, unoccupied areas, stairways, etc. (See CBC Chapter 10 definitions)
4. Identify the use of and various measuring tools used to determine occupant load, including:
   - Plans and scales
   - Field measuring devices

- Ceiling tiles
- Floor tiles

Discussion Questions

1. What are the purposes and uses of a building's occupant load?
2. When does the code require the posting of an occupant load?

Activities

1. Given several scenarios, determine the occupancy and occupant load.

Evaluation: Formative Test, Summative Test

Unit 5: Basic Means of Egress (CTS: 3-3)

Topic 1: Means of Egress Elements 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe exit access, exits and exit discharge.

Enabling Learning Objectives (ELO):

1. Describe exit access, including:
   - Corridors
   - Aisles
   - Pathways leading to an exit
   - Unenclosed ramps
   - Occupied rooms
2. Describe exits, including:
   - Number required
   - Doors
   - Exit passageways
   - Exit corridors
   - Protected or exterior stairwells
3. Describe exit discharge, including:
   - Exterior walkways
   - Private driveways and alleys

Discussion Questions

1. How does an inspector determine exit width?
2. What does the code cite as the minimum required exit width?

Activities

1. Given a list of terms, identify each term as an exit, exit access, or exit discharge

Evaluation: Formative Test, Summative Test

Topic 2: Means of Egress Components 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe means of egress components, pathway illumination, emergency lighting, exit signs and illumination, special egress control devices, access-controlled egress doors, travel distance, and be able to identify, document and report means of egress deficiencies.

Enabling Learning Objectives (ELO):

1. Describe means of egress components, including:
   - Doors
   - Door swing

- Hardware
- Corridors
  - Walls
  - Ceilings
  - Floors
- Stairs
- Ramps
- Fire escape ladders
- Fire escape slides (slidescapes)

2. Describe egress pathway illumination
3. Describe emergency lighting
4. Describe exits signs and exit sign illumination
5. Describe special egress control devices
6. Describe access controlled egress doors
7. Describe travel distance (fire sprinklers, horizontal exits, active vs. passive)
8. Describe how to identify, document and report deficiencies

Discussion Questions

1. What is the difference between a fire door and a smoke and draft assembly?
2. What mandates the maintenance of fire escapes?
3. When does the code require pathway illumination?
4. When does the code require floor-level exit signs?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Egress Inspection 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to determine occupancy-based egress requirements and egress maintenance conditions.

Enabling Learning Objectives (ELO):

1. Describe occupancy-based egress requirements, including:
   - Occupant load
   - Travel distance
   - Number of exits
   - Separation
2. Describe egress maintenance conditions, including:
   - Operational doors
   - Unobstructed pathways
   - Proper illumination
   - Proper signage

Discussion Questions

1. Is an exterior path of egress part of an exit system?
2. Is a door that is part of a listed assembly always required to be self closing?
3. When does the code allow an exit to terminate before reaching a public way?

Activities

1. Given a plan, determine occupancy classification, square footage, occupant load, number of exits required, exit separation, door hardware, signage, and illumination.

Evaluation: Formative Test, Summative Test

Unit 6: Incidental Storage, Handling, and Use of Hazardous Materials, Flammable and Combustible Liquids, and Gases (CTS 3-12)

Topic 1: Classification and Properties 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify physical and chemical properties of liquids, gases and solids; describe the physical and health hazards of liquids, gases and solids; and identify ways to determine chemical information including the use of a Materials Safety Data Sheet.

Enabling Learning Objectives (ELO):

1. Define solid, liquid and gas
2. Identify physical properties of liquids, gases and solids, including:
   - Color
   - Smell
   - Freezing point
   - Boiling point
   - Melting point
   - Opacity
   - Viscosity
   - Density
   - Specific gravity
   - Vapor density
   - Vapor pressure
   - Water solubility
   - Flammable/explosive range
   - Flashpoint
   - Evaporation rate
3. Identify chemical properties liquids, gases and solids, including:
   - Heat of combustion
   - Reactivity with water
   - pH scale
4. Describe the physical hazards of:
   - Explosives and blasting agents
   - Flammable and combustible liquids
   - Flammable solids and gases
   - Organic peroxide materials
   - Oxidizer materials
   - Pyrophoric materials
   - Unstable (reactive) materials
   - Water reactive solids and liquids
   - Cryogenic fluids
   - Combustible fibers
5. Describe the health hazards of:
   - Highly toxic materials
   - Toxic materials

- Corrosive materials

6. Identify ways to determine chemical information, including:
   - Material Safety Data Sheet
   - Labels
   - Shipping documents
   - References (ERG, NIOSH, etc.)
7. Identify the common components of a Material Safety Data Sheet, including:
   - Chemical identity
   - Manufacturer information
   - Hazardous ingredients
   - Physical and chemical characteristics
   - Fire and explosion hazard data
   - Reactivity data
   - Health hazard data
   - Precautions for safe handling and use
   - Control measures

Discussion Questions

1. What chemical properties have a significant impact on code requirements?
2. How do you classify a chemical?
3. Where do you find the properties for a specific chemical?

Activities

1. Given several MSDS examples, ask students to classify products.

Evaluation: Formative Test, Summative Test

Topic 2: Applicable Codes, Standards and Requirements 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify applicable codes and standards that regulate hazardous materials, requirements for hazardous material incidental storage, CUPA reporting requirements for an individual hazardous material, and be able to verify, document, and resolve deficiencies.

Enabling Learning Objectives (ELO):

1. Identify applicable codes and standards that regulate hazardous materials, including:
   - California Fire Code
   - California Building Code
   - NFPA
2. Identify requirements to allow incidental storage of hazardous materials, including:
   - Maximum allowable quantities
     - CFC Table 2703.1.1 (1-4)
     - CFC Table 2703.11.1
   - Permitable quantities
   - Labeling
   - Storage
   - Handling and use
   - Waste
3. Identify classification, quantities and configuration, including:
   - Observation and documentation
   - Reporting

- Resolving or referring

4. Identify the reporting requirements for a Certified Unified Program Agency (CUPA) for an individual hazardous material in excess of:
   - 55 gallons
   - 200 cubic feet
   - 500 pounds
5. Describe how to verify deficiencies, including:
   - Observation and documentation
   - Reporting in accordance with jurisdictional codes, standards, and policies
   - Referring to appropriate level when necessary

Discussion Questions

1. What is the difference between quantities requiring a permit and maximum allowable quantities?
2. What activities regulated in the fire code does the CUPA control?

Activities

1. Given various scenarios, students will determine if the quantity and type of chemical exceeds the maximum allowable quantity.

Evaluation: Formative Test, Summative Test

Summative Testing	1:00
Formative Testing	2:00

Course: **FI 1 – Fireworks and Explosives** **CFS**
Hours: 10:30 (7:30 = instruction / 3:00 = testing)
Designed For: The entry-level inspector
Description: Upon completion of this coarse the student will have an introductory knowledge of the laws and regulations related to fireworks and explosives including classifications, licenses and permits, storage, seizure, retail fireworks stands, special effects, public displays, and model rockets.
Prerequisites: None
Passing Criteria: 80%
Certification: Fire Inspector I
Class Size: 30
Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ CCR Title 19	current	

REQUIRED INSTRUCTOR MATERIALS	EDITION	VENDORS
▪ CCR Title 19	current	
▪ NFPA 1123	current	

VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI-1: FIREWORKS AND EXPLOSIVES COURSE SYLLABUS

Course Objectives: to provide the student with…

a) An introduction to laws and regulations related to fireworks and explosives
b) An introduction to fireworks classifications, licenses and permits, storage, and seizure
c) An introduction to retail fireworks stands, special effects, public fireworks displays and model rockets
d) An introduction to explosives and their required licenses and permits

Course Content 7:30

Unit 1: Introduction

Topic 1: Orientation and Administration 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to
Enabling Learning Objectives (ELO):
1. [text]
Discussion Questions
1. [text]
Activities
1. [text]
Evaluation: Formative Test, Summative Test

Unit 2: Laws and Regulations (CTS: 4-1)

Topic 1: Laws and Regulations.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe chapter 33 of the California Fire Code and the federal Department of Transportation's responsibility for transporting fireworks and explosives, and identify California regulations pertaining to fireworks and explosives.

Enabling Learning Objectives (ELO):

1. Describe CFC Chapter 33
   - Note reference to CCR Title 19
2. Identify regulations pertaining to fireworks, including:
   - CCR Title 19 Chapter 6
3. Identify regulations pertaining to explosives, including:
   - CCR Title 19 Chapter 10
4. Describe federal department of transportation responsibility for transporting fireworks and explosives

Discussion Questions

1. Which chapter of CCR Title 19 deals with explosives?
2. Which chapter of CCR Title 19 deals with fireworks?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 3: Fireworks (CTS: 4-1)

Topic 1: Classifications.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify various classifications of fireworks.

Enabling Learning Objectives (ELO):

1. Identify various classifications of fireworks, including:
   - Dangerous
   - Safe and sane
   - Agriculture and wildlife
   - Model rocket motor
   - Emergency signaling devices
   - Exempt
   - Party popper
   - High power rocket motors

Discussion Questions

1. What are considered safe and sane fireworks?
1. Are safe and sane fireworks approved for use statewide?
2. When might someone use an agriculture/wildlife firework?
3. What is the difference between a model rocket motor and a high power rocket motor?

Activities

1. Match situations to fireworks classifications

Evaluation: Formative Test, Summative Test

Topic 2: Licenses and Permits 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe licenses required for fireworks, jurisdictional authority for safe and sane fireworks, permit application requirements, how to verify deficiencies, and be able to identify the State Fire Marshal seal of registration.

Enabling Learning Objectives (ELO):

1. Describe the types of licenses required for fireworks (CCR, Title 19, section 981.5)
   - Model rocket
   - Pyrotechnic operator
2. Identify the State Fire Marshal seal of registration
   - California State Fire Marshal has an approved seal (see CCR, Title 19)
   - Seal includes
     - Fireworks classification (at the top)
     - Manufacturer (at the bottom)
3. Describe jurisdictional authority for safe and sane fireworks
   - Permitted by State Fire Marshal
   - Can be regulated or prohibited by local authority ordinance
4. Identify types of permit for:
   - Public display
   - Model rockets
   - Special effects
5. Describe local permit application requirements, including:
   - Date and time of display
   - Size and number of shells
   - Fallout area diagram
   - Worker's comp insurance
   - State Fire Marshal's license
   - Name of company providing product
   - Identifications of all assistants
   - Shipping and US Department of Transportation permit verification
6. Describe how to verify deficiencies, including:
   - Observation and documentation
   - Reporting
   - Resolving or referring

Discussion Questions

1. When can someone use safe and sane fireworks?
2. Who can operate a public display of fireworks?
3. What is considered close proximity?
4. Can you discharge fireworks inside a building?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Storage 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe types of

magazines and types of storage for safe and sane fireworks, and identify access roads and signs required for fireworks storage.

Enabling Learning Objectives (ELO):

1. Describe types of magazines
2. Describe types of storage for safe and sane fireworks
3. Identify access roads and signs required for fireworks storage

Discussion Questions

1. What type(s) of storage does the code require for a public display?

Activities

1. To be determined by instructor

Evaluation: Formative Test, Summative Test

Topic 4: Seizure 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the process to seize fireworks.

Enabling Learning Objectives (ELO):

1. Describe procedures for seizing fireworks
   - As prescribed by local authority
   - Regulated under California laws and regulations

Discussion Questions

1. Who could enforce seizure operations within your jurisdiction?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Retail Fireworks Stands 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able carry out a required safety inspection of a fireworks stand.

Enabling Learning Objectives (ELO):

1. Describe the required safety inspection of fireworks stands, including:
   - Requirements contained in CCR, Title 19
   - No smoking
   - Storage and handling
   - Associated permits (electrical)
   - Electrical power sources
   - Verification of age of sellers
   - Prohibition of alcohol and narcotics

Discussion Questions

1. When (dates and times) can fireworks be sold?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 6: Special Effects 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the physical hazards and requirements for special effects displays.

Enabling Learning Objectives (ELO):

1. Describe the requirements for special effects displays, including:
   - Operator permits and licensing
   - Orientation meeting on the design and shooting of the event
   - Materials storage and handling
   - Mixing
2. Describe physical hazards, including:
   - Fire
   - Explosion
   - Smoke
   - Bright light

Discussion Questions

1. What are the greatest concerns related to special effects shoots?
2. When should local authorities prohibit a special effects shoot?
3. What is the role of a fire safety officer at a special effects shoot?
4. What training is available to qualify an inspector to properly oversee a special effects event?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 7: Public Display 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify firing methods and describe permit requirements, mortars and aerial shells, site location requirements, safety tools and equipment, personal safety equipment, and post display procedures for public fireworks displays.

Enabling Learning Objectives (ELO):

1. Describe the requirements for public display permits, including:
   - Licensed operator
   - Insurance
2. Identify firing methods, including:
   - Electronic
   - Hand fired
3. Describe mortars and aerial shells, including:
   - Metal
   - Cardboard
   - Plastic
   - Well secured to prevent movement
   - Angled if necessary to permit proper trajectory and landing
   - Undamaged and in good condition
   - Properly sized for launch tube
   - Properly and completely loaded
4. Describe site location requirements, including:
   - Map to plan location
   - Not in close proximity to building, public, or a wildland urban interface environment (NFPA 1123)
   - Confirm wind and other environmental factors will not impact shoot

5. Describe safety tools and equipment, including:
   - Water fire extinguisher
   - Bucket to soak duds
   - Flashlight(s)
6. Describe personal protective equipment, including:
   - Proper training and supervision
   - Helmet
   - Goggles
   - Gloves
   - Long sleeve flame-retardant jacket
   - Fire resistive long pants
   - Closed-toe boots or shoes
7. Describe post display procedures (Title 19 section 1005), including:
   - Reports
   - Notifications
   - Unfired shells

Discussion Questions

1. What is considered an aerial display?
2. Where would you find the shell size as related to the mortar? (CCR, title 19, section 999)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 8: Model Rockets 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the physical hazards and requirements related to model rockets.

Enabling Learning Objectives (ELO):

1. Describe requirements for model rockets, including:
   - Storage and sales
   - Classifications and labeling
   - Standards and use
   - Site considerations
   - Minimum age
   - Operator requirements
   - Permit requirements
2. Describe physical hazards, including:
   - Potential for fire or explosion
   - Potential for trajectory injury
   - Proximity to structures and wildland urban interface environments

Discussion Questions

1. Which permits and licenses does the code require to shoot a model rocket?
2. Which classifications and labels does the code require for model rockets? (CCR, title 19 article 17)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 4: Explosives (CTS: 4-1)

Topic 1: Identification 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the fire department's role, hazards, classifications, storage requirements, and AHJ notification requirements as they related to explosives, as well as, ammunition and primers, smokeless powder and black sporting powder, and construction of a class I and class II magazine.

Enabling Learning Objectives (ELO):

1. Identify the fire department's role in regulating explosives, including:
   - Secondary to the sheriff's department in most jurisdictions
   - Some interaction with police department and sheriff department
2. Identify the hazards of explosives
3. Identify the classifications for explosives
4. Identify storage requirements
5. Identify AHJ notification requirements
6. Identify small arms ammunition and primers
7. Identify smokeless powder and black sporting powder
8. Identify construction of a class I and class II magazine

Discussion Questions

1. What does the code require regarding smokeless powder and black sporting powder retail displays?
2. When does the code require a class I magazine for storage?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Licenses and Permits 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe general types of regulated explosives, required permits, and display and storage requirements.

Enabling Learning Objectives (ELO):

1. Describe the general types of regulated explosives, including:
   - Black powder
   - Smokeless powder
   - Dynamite
2. Describe the types of permits required for explosives, including those listed in:
   - California Fire Code
   - CCR, Title 19
2. Describe display and storage requirements for:
   - Smokeless powder
   - Black sporting powder

Discussion Questions

1. Where would you find permitting requirements for explosives? (CCR, title 19 section 1565.1)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Summative Testing 1:00

Formative Testing 2:00